

IN THE SPECIFICATION:

Please replace the paragraph spanning page 4, lines 9-21 as follows:

The solution according to the invention, for a connecting element for mechanically connecting constructive elements, comprising an elastically deformable tensioning element ~~which applies~~ adapted to apply a holding force in its elastically ~~deformed~~ expanded state, onto at least one constructive element connected by the connecting element, thus generating a nonpositive (frictional) connection of at least one constructive element with the tensioning element or with another constructive element, consists of the fact that the tensioning element comprises a spring material made of a superelastic shape memory alloy, in particular a nickel-titanium alloy, which is expanded elastically (purely elastically, superelastically) in the tensioning element.

Please replace the paragraphs spanning page 14, line 20 through page 18, line 5 as follows:

For this, the legs 8, 9 can be located, e.g. side by side, and fixed with a section of a spring tube, pushed over the leg ends 8, 9, preferably consisting of a superelastic shape memory material, thus corresponding to a clamping sleeve 10, described hereafter. At the same time, one or more further pieces can be introduced and also joined into the other end of the sleeve, fixing the tensioned legs 8, 9 of the leg spring 7.

Figures 12-15 illustrate a first connecting element according to the invention which comprises a tensioning sleeve [[10]] made of a superelastic shape memory material as the connecting element. Fig. 12 illustrates a cross section through the clamping sleeve [[10]]. In its relaxed state, it preferably shows a circular cross section (Fig. 12-10_r); in the pre-tensioned state according to Fig. 13 (10_{pt}), and in the partially relaxed state according to Fig. 14 (10_{pr}), it presents an oval cross section.

For the insertion, in axial direction, of the constructive elements 2, 3 to be connected, into the clamping sleeve [[10]], it is necessary to bring the clamping sleeve 10_r from the position illustrated in Fig 12, to the oval to form 10_{pt} according to figure 13, by compressing it. Hereby, the clamping sleeve 10_{pt} is elastically deformed and pre-tensioned. In this state, both constructive elements 2, 3 to be connected are inserted, according to the cross section in Fig. 14; after that, the clamping sleeve 10_{pr} is relaxed.

The unloading partially relaxes the clamping sleeve [[10]] 10_{pt} as it aspires to recover its initial, round state. This, however, is partially impeded, as the inserted constructive elements 2, 3 together have a dimension that is bigger than the initial inner diameter of the relaxed clamping sleeve 10_r. This generates a force pressing together the constructive elements 2, 3 to be connected, joining them reliably. For detaching the connection, the clamping sleeve 10_{pr} can once again be pressed into a shape according to

Fig. 13, bringing it into a pre-tensioned state (10_{pr}), enabling to pull out the constructive elements 2, 3.

As compared to a conventional spring steel or a spring bronze, which allow a maximum elastic expansion of 0.5%, the clamping sleeve $[[10]]$ according to the invention, consisting of a superelastic shape memory, offers the advantage to allow up to 8% or more of elastic expansion. Thus, it is possible to allow bigger tolerances, whereas, e.g., half of the usable expansion range can be applied for the manufacturing tolerances and the other half can be applied for the maintenance of the elastic deformation and the generation of the holding forces.

Also as compared to the known shrinking sleeves consisting of shape memory alloys, used for shrinking connections, the clamping sleeves $[[10]]$ according to the invention offer essential advantages, as they allow bigger tolerances and dimensional deviations without affecting the function. For example, a pre-expanded shrinking sleeve of an inner diameter of 0.80 mm, can be shrunk to an inner diameter of 0.76 mm as a maximum. On the other hand, a round, superelastic tube section of a clamping sleeve 10 with an inner diameter of 0.80 mm can be compressed to an inner diameter of 0.47 mm without a permanent deformation of the pre-tensioned tube. The holding forces for this are generated by elastic deformations, bending forces and expansions.

In the embodiment according to the figures 12-14, the outer diameter of the clamping sleeve 10_i in its initial or relaxed state is 1.00 mm according to Fig. 12, and the inner diameter is 0.82 mm. In the pre-tensioned state according to Fig. 13 (10_{pr}), the large outer diameter is 1.62 mm, the large inner diameter is 1.44 mm, the small outer diameter is 0.64 mm and the small inner diameter is 0.46 mm. The diameter of the two constructive elements 2, 3 is 0.45 mm each, so that the clamping sleeve 10_{pr} according to Fig. 14, shows the following dimensions in the partially relaxed state: large outer diameter 1.10 mm, large inner diameter 0.92 mm, small outer diameter 0.90 mm and small inner diameter 0.72 mm.

Fig. 15 illustrates a section A - A' according to Fig. 14. The section B - B' corresponds to the representation in Fig. 14. It can be seen that the constructive elements 2, 3 to be connected, are inserted into the tube-shaped clamping sleeve $[[10]]10_{pr}$; the constructive elements are arranged parallel to each other in a section of clamping sleeve 10_{pr} . As an alternative, more than two constructive elements to be connected, can be inserted into the clamping sleeve $[[10]]$. Furthermore, embodiments are possible, in which two or more constructive elements 2, 3 to be connected, are inserted, which contact each other with their face ends in the clamping sleeve $[[10]]$, or which are oriented with their ends facing to each other.

The respective ends of the connected constructive elements 2, 3 can be inside of the clamping sleeve 10_{pr} , as shown in Fig. 15, or stick out of the clamping sleeve $[[10]]$. The holding force generated by the clamping sleeve $[[10]]$ is determined by the mechanical material properties, the dimensions, the geometric conditions and the surface structure. If the clamping sleeve $[[10]]$ has a corresponding length, it can achieve a

tensile strength of the connection which is higher than that of the connected constructive elements 2, 3.

Fig. 16 illustrates a connecting element fulfilling the function of a T-junction. A leg spring 7 is wound around a constructive element 2; the legs 8, 9 of the leg spring 7 are fixed with a clamping sleeve 10_{pr}. This procedure generates a fixed connection of the leg spring 7 and the constructive element 2. A further constructive element 3 is inserted in the clamping sleeve 10_{pr}, and fixed together with the legs 8, 9. It is held, together with the legs 8, 9, by the clamping sleeve 10_{pr} by means of elastic deformation forces.

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In Fig. 17, a leg spring 7 is wound around a constructive element 2 and connected to it, e.g., as described in figures 10 and 11. One of the legs 8 is connected to a further constructive element 3 with a clamping sleeve 10_{pr}; the other leg 9 is connected to a further constructive element 3a with a clamping sleeve 10a. By this, it is possible to generate cross junctions.

Please replace the paragraphs spanning original page 18, lines 7-31 and amended in the March 12, 2003 Amendment as follows:

Figures 18-21 correspond to the figures 12-15 and show a second connecting element according to the invention, featuring a clamping sleeve [[10]] with two or more constructive elements 2, 3 to be connected, inserted; these constructive elements can contact each other with their face ends in the clamping sleeve [[10]], or are oriented with their ends facing to each other. In its relaxed state (Fig. 18), the clamping sleeve 10_r can show a circular cross section, and in the pre-tensioned state (Fig. 19-10_{pr}), and in the partially relaxed state (Fig. 20-10_{pr}), an oval cross section. In this example, the cross section of the parts (2", 3") to be joined is oval.

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Figures 22-25 correspond to the figures 12-15 and show a third connecting element according to the invention, featuring a clamping sleeve 10' with two constructive elements 2, 3 inserted; these constructive elements are oriented with their ends facing to each other. In its relaxed state (Fig. 22), the clamping sleeve 10' 10_r can show an oval cross section, in the pre-tensioned state (Fig. 23-10'_{pr}), it can show a deformed state as compared to the relaxed state, e.g. a circular or oval cross section, and in the partially relaxed state (Fig. 24-10'_{pr}), an oval cross section. In this example, the cross section of the constructive elements 2, 3 to be joined is circular.

Please replace the paragraphs spanning original page 18, line 33 through page 19, line 24 and amended in the March 12, 2003 Amendment as follows:

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Figures 26-29 correspond to the figures 12-15 and show a fourth connecting element according to the invention, featuring a clamping sleeve [[10]] with two constructive elements 2', 3' to be connected, inserted; these constructive elements are arranged parallel to each other within a section of the clamping sleeve [[10]]. In its relaxed state (Fig. 26), the clamping sleeve 10_r can show a circular cross section, and in the pre-tensioned state (Fig. 27-10_{pr}), and in the partially relaxed state (Fig. 28-10_{pr}), an

oval cross section. In this example, the cross section of the constructive elements 2', 3' to be joined is rectangular.

Figures 30-33 correspond to the figures 12-15 and show a fifth connecting element according to the invention, featuring a clamping sleeve 10" with three constructive elements 2, 3, 3a to be connected, inserted; these constructive elements are arranged parallel to each other within a section of the clamping sleeve 10". In its relaxed state (Fig. 30), the clamping sleeve 10" can show a circular or oval cross section, in the pre-tensioned state (Fig. 31-10"_{pt}), it can show a cross section deformed on three sides in radial direction, or a cross section flattened on three sides, respectively, and in the partially relaxed state (Fig. 32-10"_{pr}), a cross section arced on three sides. In this example, the cross section of the constructive elements 2, 3, 3a to be connected is circular.

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